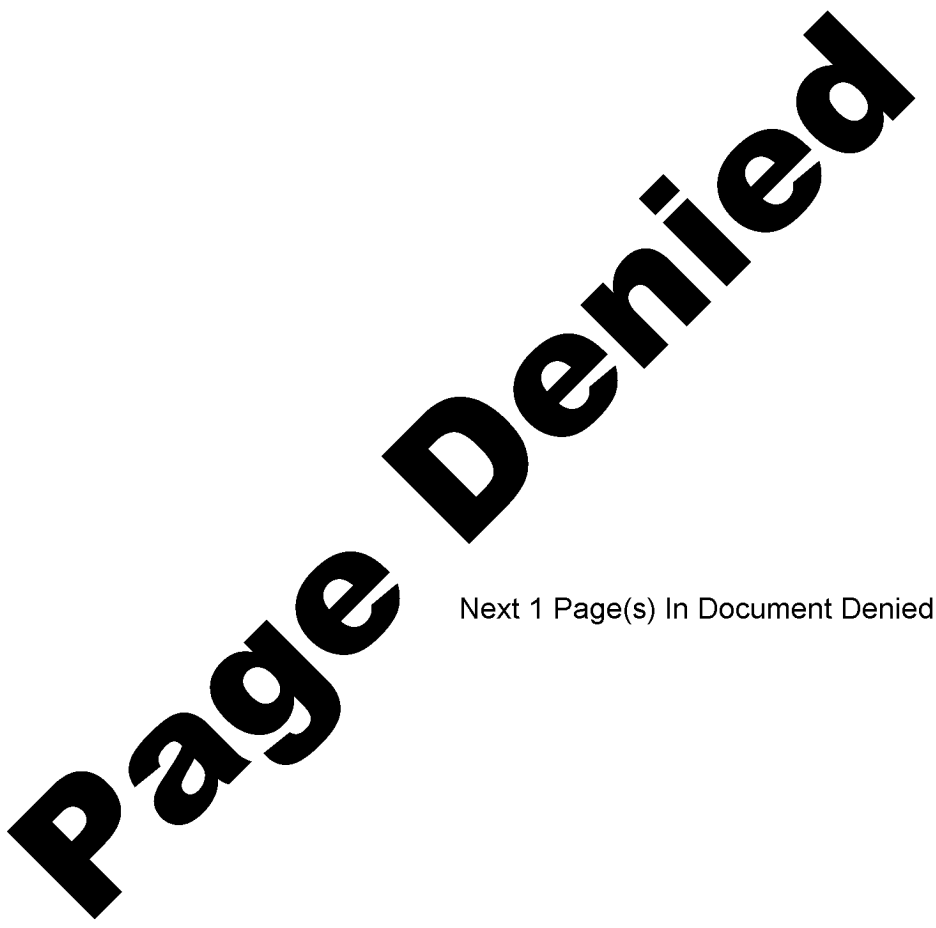

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CORNING GLASS WORKS

ELECTRO-OPTICS LABORATORY

RALEIGH, NORTH CAROLINA

IMPROVED SCREEN FOR REAR PROJECTION VIEWERS

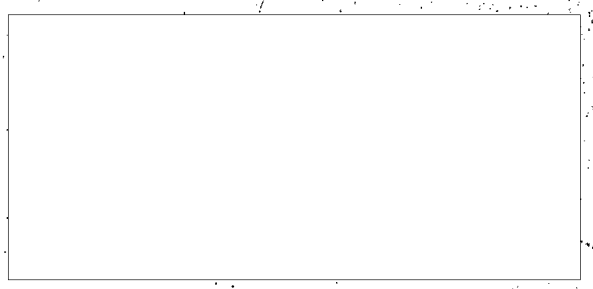
Technical Report No. - 13

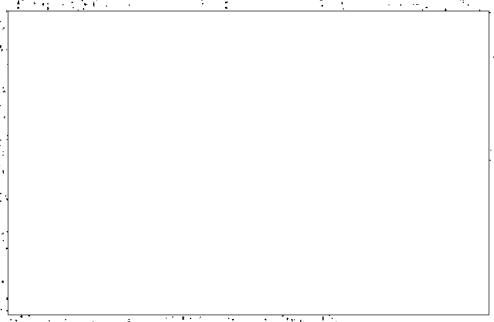
Date - September 16, 1966

Period Covered - August 25, 1966

to

September 16, 1966





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TECHNICAL REPORT # 13

This constitutes Technical Report No. 13 which reports progress in the interim between Technical Report No. 12 and 14. This is in keeping with our new schedule of making detailed technical reports bi-monthly and a brief summary report for the remaining periods.

I. Materials

A. Glass Ceramics

Four new samples of material have been obtained and are being evaluated. Within the next month we will obtain samples, made to our specifications, of the following materials:

1. Low refractive index particles (n = 1.3) in a high index glass (n = 2.0).
2. High index particles (n = 2.0+) in a low index glass (n = 1.5).
3. New melts of AC 18 and AC 19. Each melt will consist of four different heat treatments to bracket the ones used for the first samples.
4. Metallic particles in glass.

B. Fotoform ® Glass

We have started to investigate techniques of forming lenticular surfaces on this glass by exposing it through a fine nickel mask, heat treating it, and then etching out the desired pattern. In addition, we are growing surface layers of crystaline material in this glass and correlating the thickness of this scattering layer with the resulting optical properties.

I. Materials - Continued

C. Lenticular Surfaces

A glass blank measuring 16" x 5" x 1/2" with 40 - 1/8", 30° prisms cut into its surface has been fabricated and sent to our facilities in New York for redrawing into ribbon. This is the same process used in making optical fibers. After redraw there will be four groups of ribbon with following sizes of lenticules:

1. 5 - 8 Microns
2. 12 - 18 Microns
3. 30 - 35 Microns
4. 220 - 230 Microns

The optical properties of both the lenticular ribbon and of certain scattering materials with the ribbon attached, to form a lenticular layer, will be investigated.

II. Instrumentation

We are experiencing some delay in completing the modulation transfer function analyzer. This is because of long delivery times for two critical components. As much of the system as possible has been checked out and only a minimum amount of final checking will be required following the completion of the electronics.